ORAL HEALTH SURVEY
NEVADA 2004

Bureau of Family Health Services
Nevada State Health Division
Department of Human Resources

Judith M. Wright, Bureau Chief

Kenny C. Guinn
Governor

Alex Haartz, MPH
Administrator

Michael J. Willden
Director

Bradford Lee, MD
State Health Officer

June 2004

"The test of the morality of a society is what it does for its children."
---- Dietrich Bonhoeffer

Project Direction

Christine Forsch, RDH, BS
Oral Health Program Manager
Nevada State Health Division
Oral Health Program

Dr. Michael Sanders, DMD
State Dental Consultant
Nevada State Health Division
Oral Health Program

Kathy Phipps, DrPH
Epidemiologist
Association of State and Territorial Dental Directors
Directors Consultant

Head Start (HS) Program Survey Facilitators

Kathleen Biagi
Director
HS State Collaboration Office

Dayle Everts, RN
Health Services Manager
HS of Northeastern Nevada

Elaine Bender
Director
Reno-Sparks Indian Colony HS

Trina McCoy
Health Services Manager
Community Services HS

Mary Eldridge
Director
Little People's HS Program

Raylene Friel
Health Manager
Inter-Tribal Council of Nevada HS

Kathie Stanfield
Health & Nutrition Services Assistant
University of Nevada, Reno
Early HS Program

Dolores Jones, RN
Health Coordinator
EOB/CAP Early HS/HS Program

Bernita Simpson
Programs Manager
Washoe Tribe of NV & CA HS Program

*Special thanks to all Head Start nurses who aided in screening activities.

Screener

Lori Cofano, RDH, BS
Fluoridation Consultant
Nevada State Health Division
Oral Health Program

Data Collection

Thara Salamone, MS
Biostatistician
Nevada State Health Division
Oral Health Program

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Introduction

Since the release of *Oral Health in America: A Report of the Surgeon General* in June 2000, the Nevada State Health Division has increased its focus on improving oral health in the state. The Nevada Oral Health Program began a challenging endeavor to collect baseline data on oral health in the state, using indicators that were introduced by the Surgeon General's report and Healthy People 2010, a 10-year health objectives plan for the nation developed by the U.S. Department of Health and Human Services. The Healthy Smile – Happy Child Screening Survey was created and first conducted in 2003 to collect oral health data on third graders in Nevada. For 2004, the survey focused on children ages 3 to 5 who were enrolled in the Head Start program.

With the cooperation of the Nevada Head Start State Collaboration, children in 44 programs were screened. The survey collected prevalence data on early childhood caries, caries experience, untreated decay, and the need for urgent dental treatment. These data are important in that they estimate the extent of oral health needs in young low-income children. According to the Surgeon General's report, children from low-income families have more tooth decay, more extensive tooth decay, and suffer more pain than children from families with higher incomes. Survey results will aid in the development of new programs and interventions to prevent oral disease so that growth, development, and overall quality of life in Nevada's children are not compromised.

This report is available on the State Health Division website www.health2k.state.nv.us/oral. Comments, suggestions, and requests for further information may be addressed to:

Oral Health Program
Bureau of Family Health Services
Nevada State Health Division
3427 Goni Road, Suite 108
Carson City, NV 89706
TEL: (775) 684-4285
FAX: (775) 684-4245

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Sampling and Methods

This survey was based on the methods outlined in the Association of State and Territorial Dental Directors' 1999 publication *Basic Screening Surveys: An Approach to Monitoring Community Oral Health*. The consent form used and parent questionnaire were taken directly from the publication, with minor formatting changes.

A data file listing all Head Start and Early Head Start grantees in Nevada was obtained. The file included the location, number of children enrolled, and the hours of operation of each program in the state. With the knowledge that less than 3,000 children were enrolled statewide, the Oral Health Program chose to schedule a screening at all Head Start and Early Head Start sites. All children with a signed, positive consent form who were present on their scheduled screening day were examined.

Although Early Head Start children were screened, the results will not be presented in this report due to the small number of children seen (74) and also because most of these children did not yet have their primary teeth.

The results of the screening will thus only be representative of Head Start children, who are from families with an income at or below federal poverty guidelines, not of all preschool children in Nevada. Not more than 10 percent of Head Start children are from families with incomes that exceed the federal poverty guidelines.

One Nevada licensed dental hygienist performed all the screenings using a flashlight, gloves, disposable mirrors, and cotton tip applicators when necessary to remove debris. Data collection was performed on-site with the use of a laptop computer. The data were collected in real-time and stored in an MS Access database. Permanent teeth were only recorded if there was visible decay on the tooth. The condition of each primary tooth was recorded as one of the following:

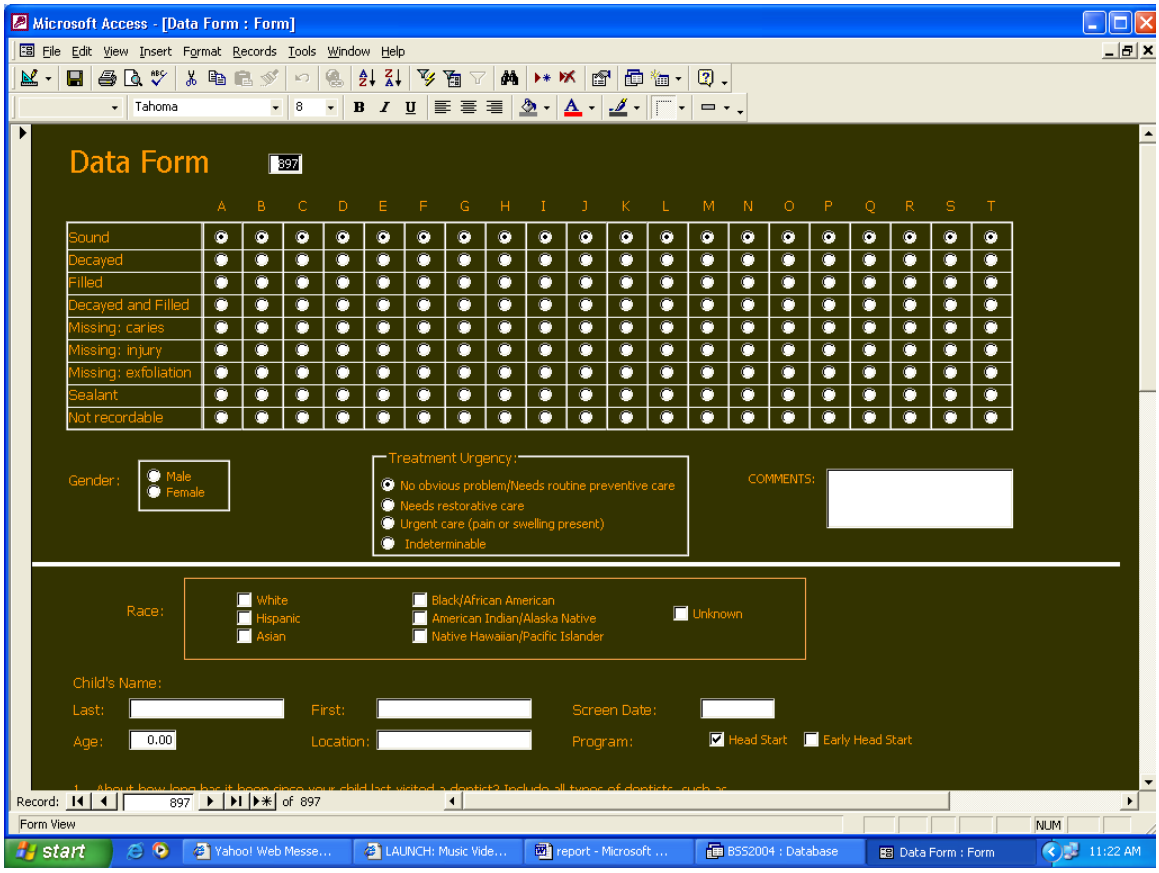
1) Sound
2) Decayed
3) Filled
4) Decayed and Filled
5) Missing due to caries
6) Missing due to injury
7) Missing due to exfoliation
8) Sealant present
9) Not recordable

A tooth was marked as "decayed" if there was visible untreated decay (as described in the ASTDD guidelines) present. Teeth with amalgam and composite fillings, stainless crowns, porcelain fused to metal crowns, and bridges were

marked “filled.” Any tooth with an existing restoration and visible recurrent decay was marked “decayed and filled.”

Figure 1.

Data Collection Form



A Treatment Urgency rating was also assigned to each child by the criteria below:

Urgent Care – signs or symptoms that include pain, infection, swelling, or soft tissue ulceration of more than two weeks duration (determined by questioning)

Needs Restorative Care – visible caries without accompanying signs or symptoms, individuals with spontaneous bleeding of the gums, or suspicious white or red soft tissue areas

No Obvious Problem/Needs Routine Preventive Care – any child without the above problems

The data file was imported to SPSS (Statistical Package for the Social Sciences) for editing and analysis. The data were weighted for non-response. Complete lists of the Head Start programs and their participation rates can be found in the appendix.

Key Findings

- Dental decay is a significant public health problem for Nevada's children.
  - 54.0 percent of Head Start children had cavities and/or fillings (caries experience).
  - 37.5 percent of Head Start children had untreated dental decay (cavities).
  - 25.3 percent of Head Start children had early childhood caries (ECC), also known as baby bottle tooth decay.
  - 37.4 percent of Head Start children were in need of either restorative or urgent dental care.

- A large percentage of Nevada's Head Start children have limited access to regular dental care.
  - 22.0 percent of parents reported that they had trouble accessing dental care during the last year. The primary reasons were "could not afford it" and "no insurance."

- The majority of Nevada's Head Start children have some type of dental and medical coverage.
  - 64.7 percent of the parents reported that they had some type of *dental* insurance coverage for their child.
  - 68.9 percent of the parents reported that they had some type of *medical* insurance coverage for their child.

- Children with no dental insurance have poorer oral health.
  - Compared to children with dental insurance, a significantly higher proportion of children without dental insurance had untreated decay (35.2% vs. 41.4%) and ECC (22.3% vs. 29.0%), while a significantly lower proportion had no obvious dental problems (64.9% vs. 58.4%).

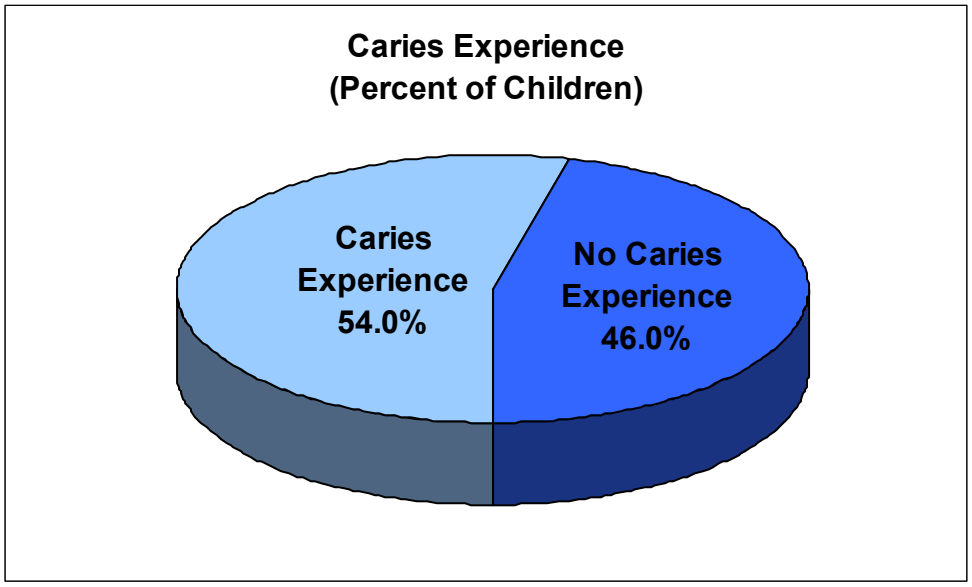
- There are regional differences in the oral health of Head Start children.
  - A higher proportion of children in Washoe County had caries experience (64.9%) than Clark County (50.3%) and rural areas (53.7%).
  - A higher proportion of children in Washoe County had ECC (28.9%) than Clark County (25.2%) and rural areas (21.2%).

- Minority children have poorer oral health.
  - 44.4% of White Non-Hispanic children had caries experience, a significantly lower proportion than that of Hispanic children (56.8%) and Non-Hispanic Minority children (54.0%).
  - 30.2% of White Non-Hispanic children had untreated decay, a significantly lower proportion than that of Hispanic children (38.9%) and Non-Hispanic Minority children (38.7%).
  - 16.3% of White Non-Hispanic children had ECC, a significantly lower proportion than that of minority children. The proportion of Hispanic children (28.6%) with ECC was significantly higher than that of Non-Hispanic Minority children (24.0%).

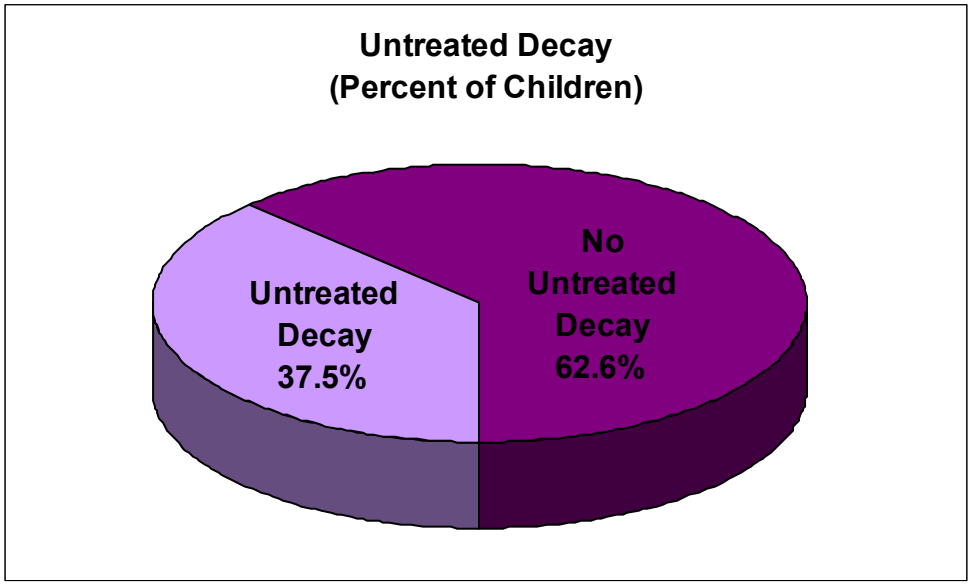
Statewide Results

A total of 1835 parent questionnaires and consent forms were received (69% response rate), and 1677 were screened (63% response rate). Fifty-one percent of the children were female. The average number of decayed, missing (due to caries), and filled teeth (dmft) per child was 2.44. The number of teeth with active decay in one child ranged from 0 to 13; the range for filled teeth was 0 to 15. The number of missing teeth ranged from 0-16. Results for the key oral health indicators are presented in the following charts.

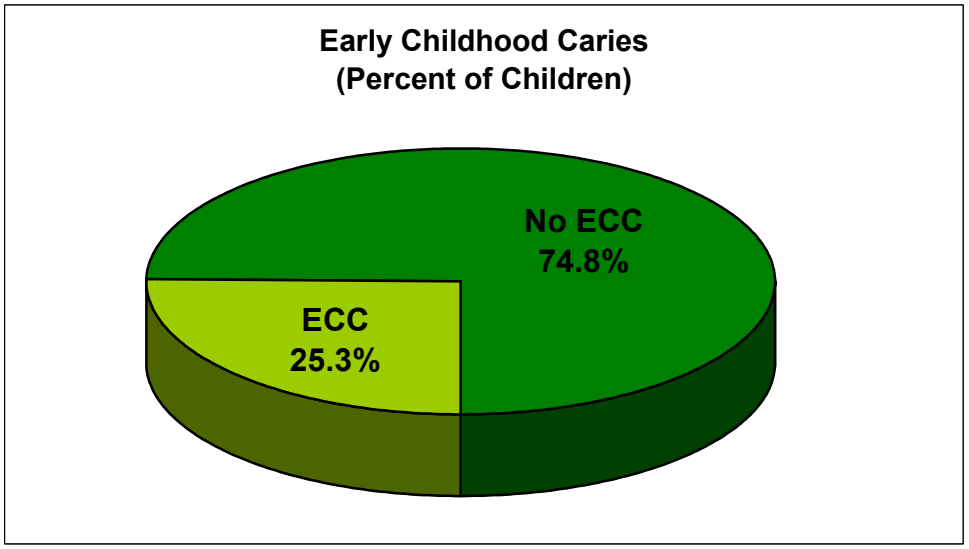
Result A: Caries experience (either restored decay or visible untreated decay) was evident in 54.0 percent of children.



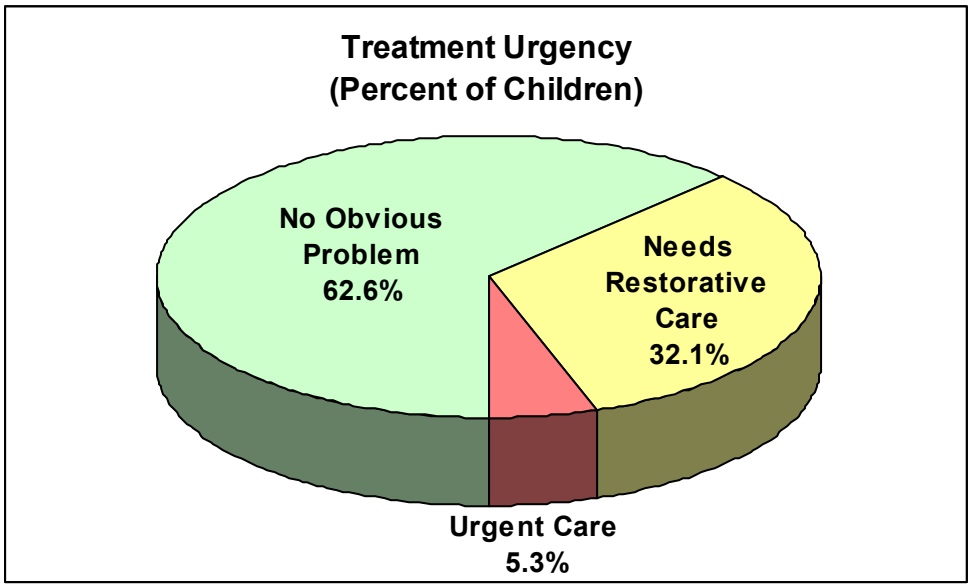
Result B: Visible untreated decay was evident in 37.5 percent of children.



Result C: If a child had a restoration or active decay in any of the top, front 6 teeth (as per ASTDD protocol), he/she were categorized as having Early Childhood Caries (ECC). ECC, also known as baby bottle tooth decay, was evident in 25.3 percent of children.



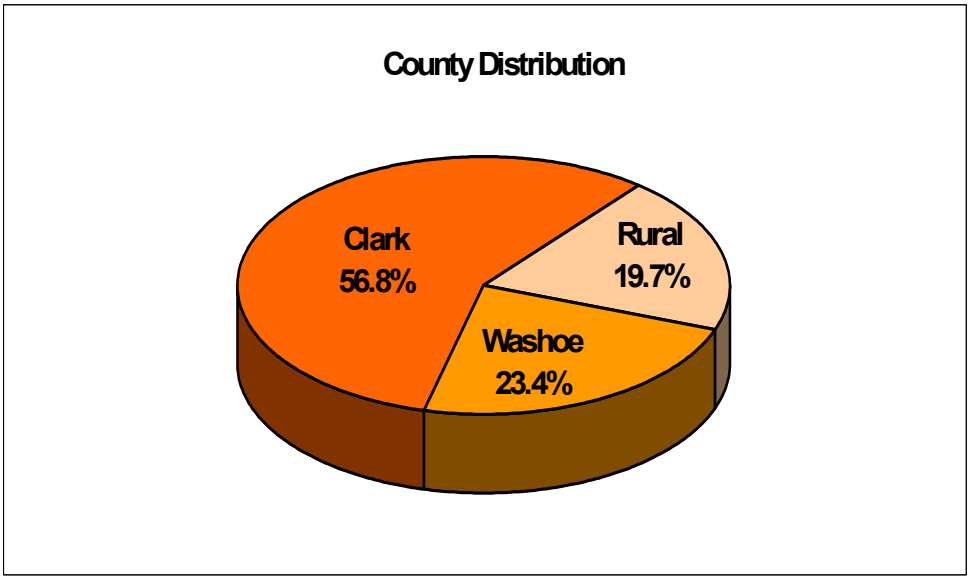
Result D: Nearly one-third of the children were in need of restorative care. Although 62.6 percent children had no obvious problems, a high 5.3 percent (89) were in need of urgent care.



Results by Region

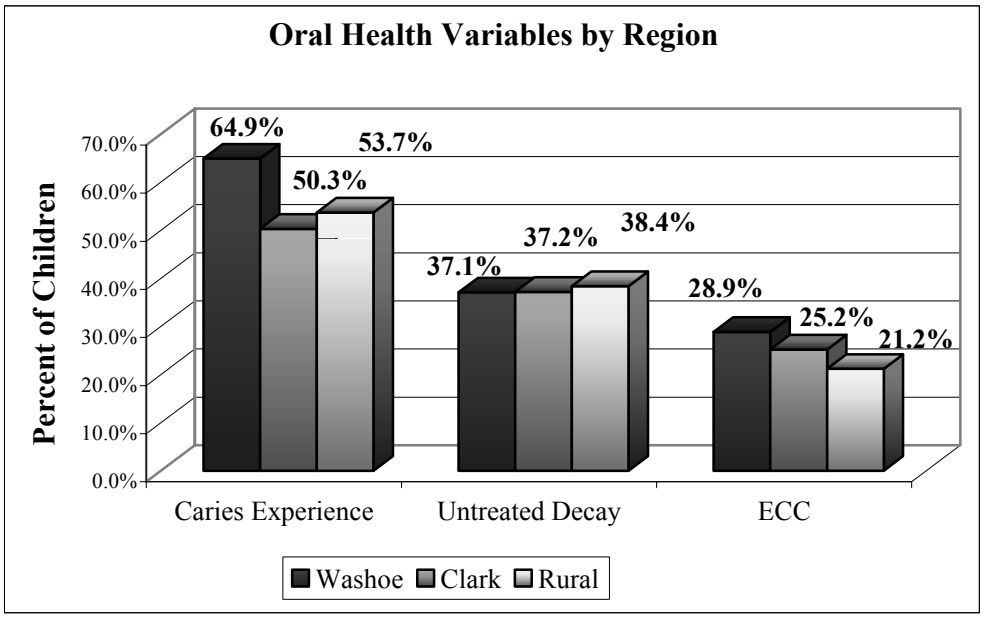
The location of the Head Start programs were categorized by three regions: Washoe County, Clark County, and Rural, which includes all other areas in the state that are not part of the northern nor southern metropolitan areas of the state.

Figure 2.



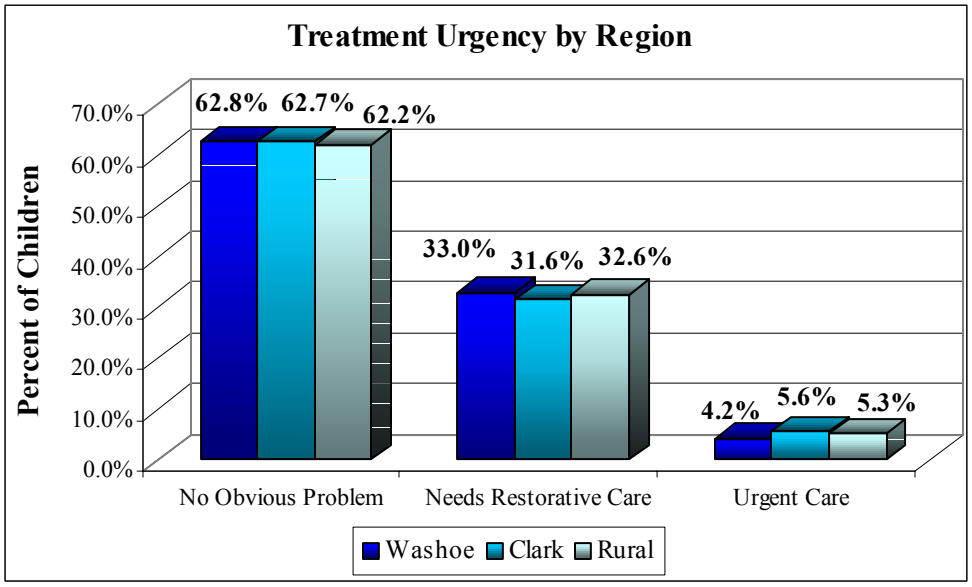
The following results are stratified by region so as to show any significant differences in oral health between the three regions in Nevada.

Result E: There was a significant difference between caries experience and ECC between regions. Washoe had a greater proportion of children with caries experience than Clark and Rural areas at nearly 65 percent. Similarly, Washoe had a greater proportion of children with ECC at nearly 29 percent. However, no difference was found between regions for untreated decay.



Results from last year's Healthy Smile - Happy Child survey led to speculation that Clark County would have a higher proportion of children with caries experience than other regions in the state. However, Washoe County had the highest proportion of children with caries experience and ECC. Furthermore, Clark County had the lowest proportion of children with caries experience. It is possible that the effects of fluoridation, implemented in 2000, are now surfacing. This conjecture is supported by the lower proportion of ECC in Clark County as compared with Washoe County. It is possible that fluoridation prevented decay in Clark County children at younger ages. In rural areas, the lower proportion of children with caries experience and ECC may be attributed to racial distribution; the percentage of White Non-Hispanic children in rural areas (37.7%) was greater than that in Washoe County (16.0%) and in Clark County (8.1%). The proportion of Clark County children with untreated decay does not differ from the other regions, possibly because access to care is a statewide issue. There is no significant difference in treatment urgency between regions perhaps for the same reason.

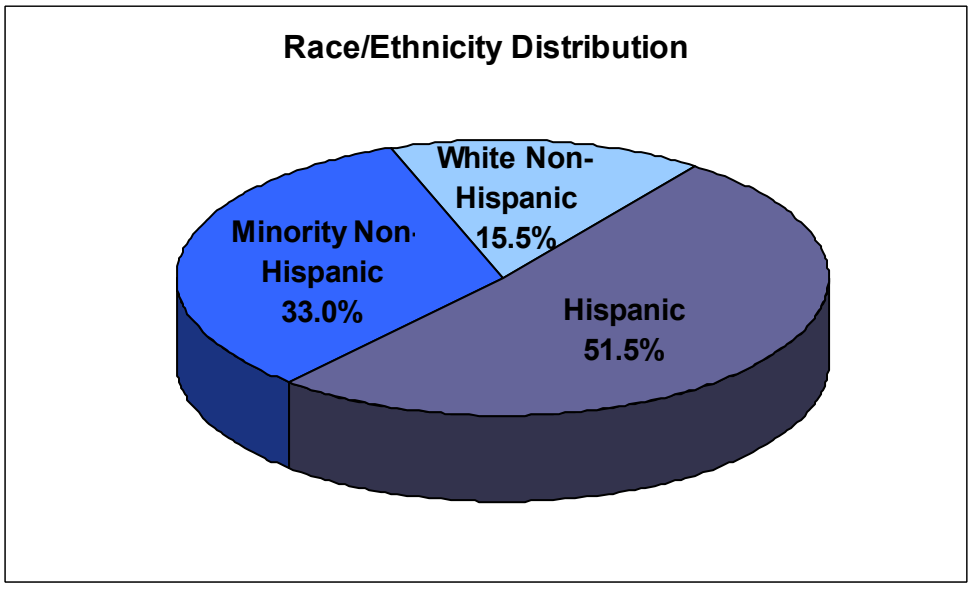
Result F: No significant differences were found between regions for treatment urgency.



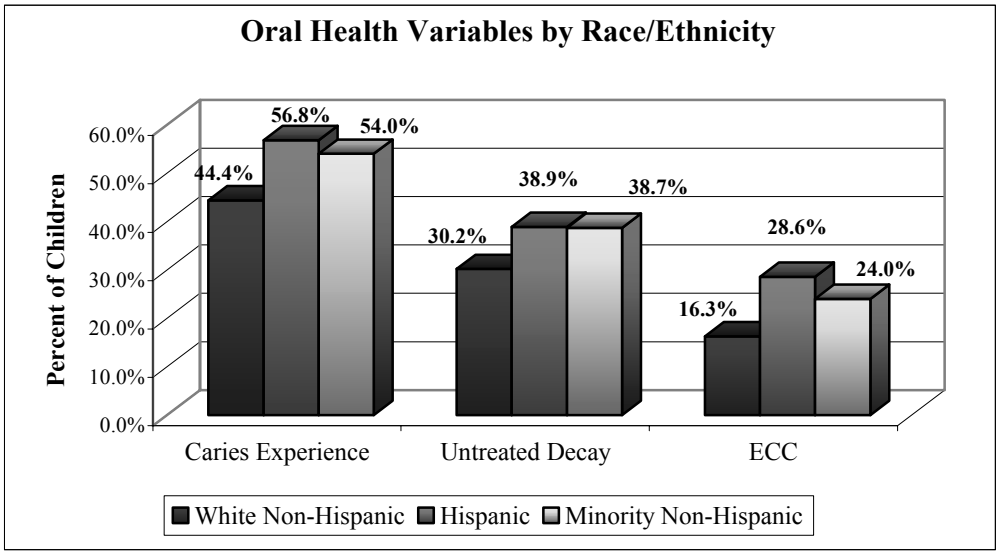
Results by Race/Ethnicity

When screened, the children were classified using six categories for race and ethnicity: White, Black, Asian, Hispanic, Native American, and Pacific Islander. For reporting purposes, these were condensed to three categories: White Non-Hispanic, Hispanic, and Minority Non-Hispanic. Approximately 85 percent of the children screened were minorities.

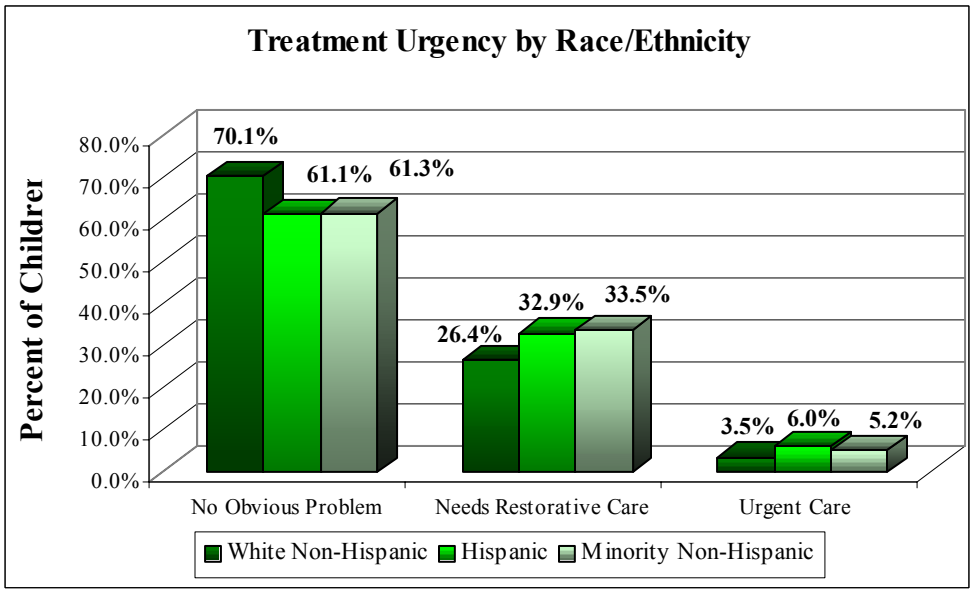
Figure 3.



Result G: Significant differences were found for all oral health indicators between race/ethnicity categories. Fewer White Non-Hispanic children had caries experience, untreated decay, and ECC than all other minorities. There was a difference of at least 8 percent between whites and minorities for all variables. More Hispanic children had ECC than other minorities, but the percentages for other variables were similar.



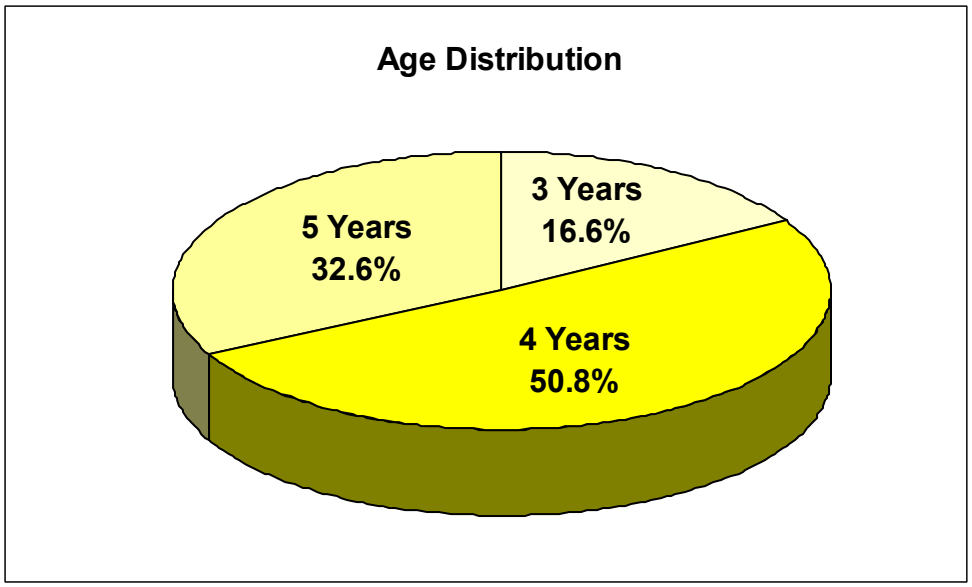
Result H: There was a relationship between race/ethnicity and treatment urgency. More minorities had need of restorative care and urgent care than whites. While 70 percent of white children had no obvious problem, only 61 percent of Hispanic and other minority children had no treatment needs.



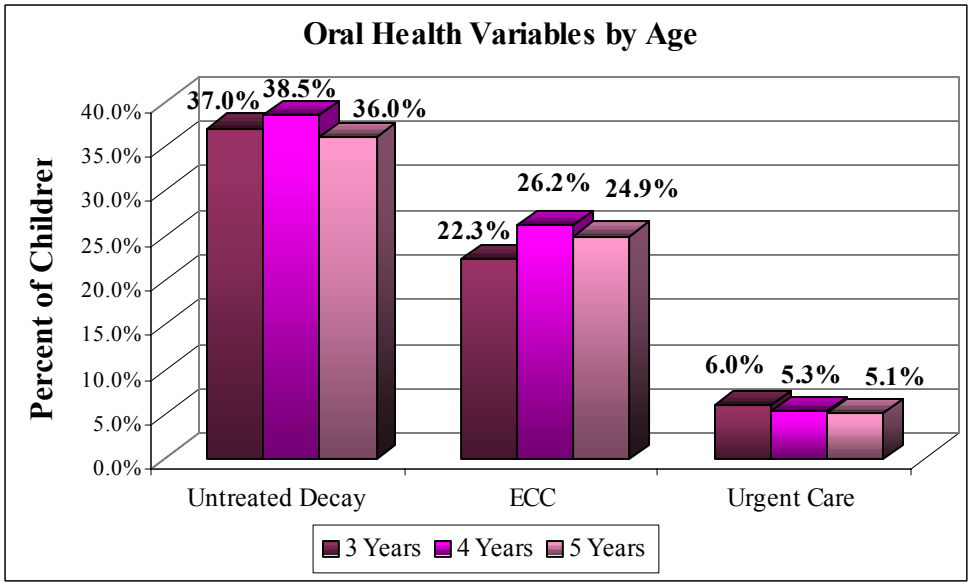
Results by Age

The average age of children was 4.16 years, ranging between three and six years. Nearly 51 percent of the children were age 4. One six year-old was screened and is thus not represented in the following charts.

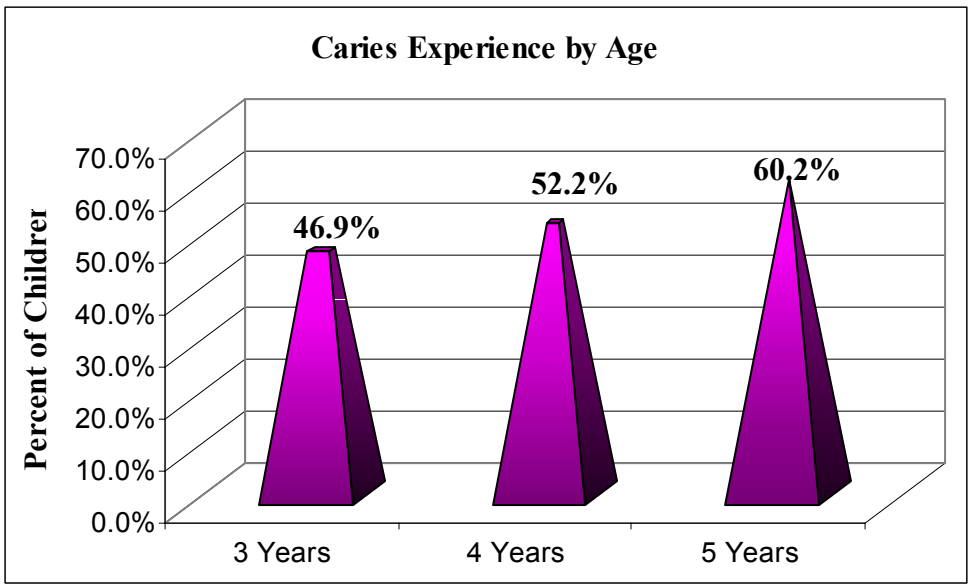
Figure 4.



Result I: No significant differences were found between the ages for untreated decay, ECC, or need for urgent care.



Result J: Since oral diseases are cumulative, it was logical that the data showed an increase in caries experience with age. Among three year-olds, 46.9 percent had caries experience. Of children who were five years of age, the percentage of those with caries experience was as high as 60.2 percent.



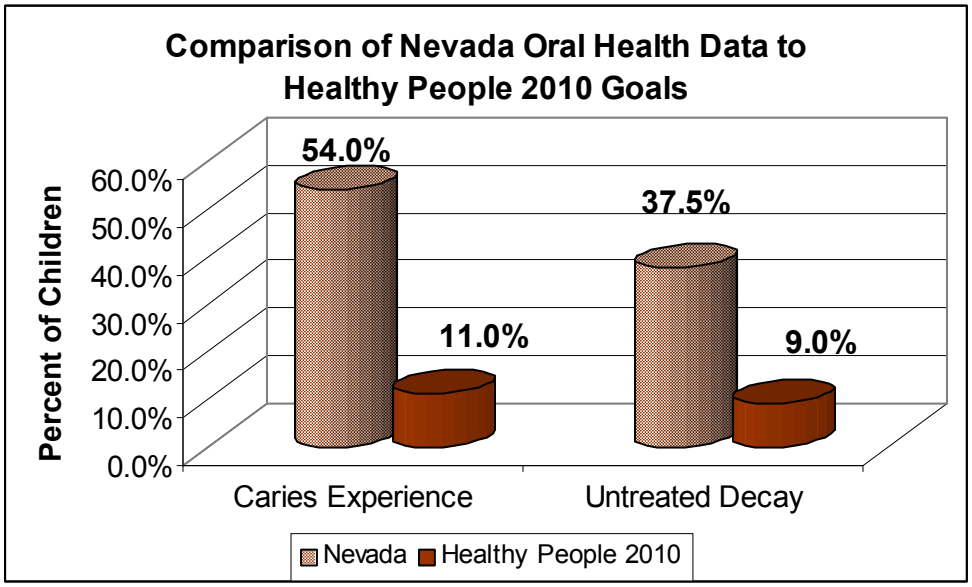
Access to Care and Healthy People 2010

Federal Healthy People 2010 objectives include two oral health status objectives for children age 2 to 4 years. They are:

- To decrease the proportion of children who have experienced dental caries in their primary teeth to 11 percent
- To decrease the proportion of children with untreated dental caries in their primary teeth to 9 percent

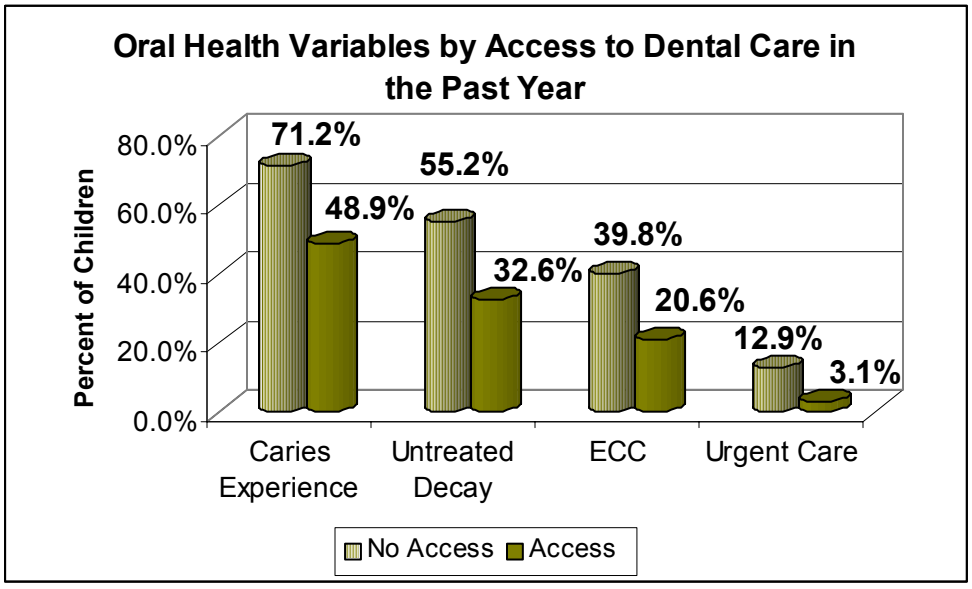
The range of the children screened was 3 to 5 years, however it is clear that considerable improvement in oral health is needed in young Nevadans in general.

Figure 5.



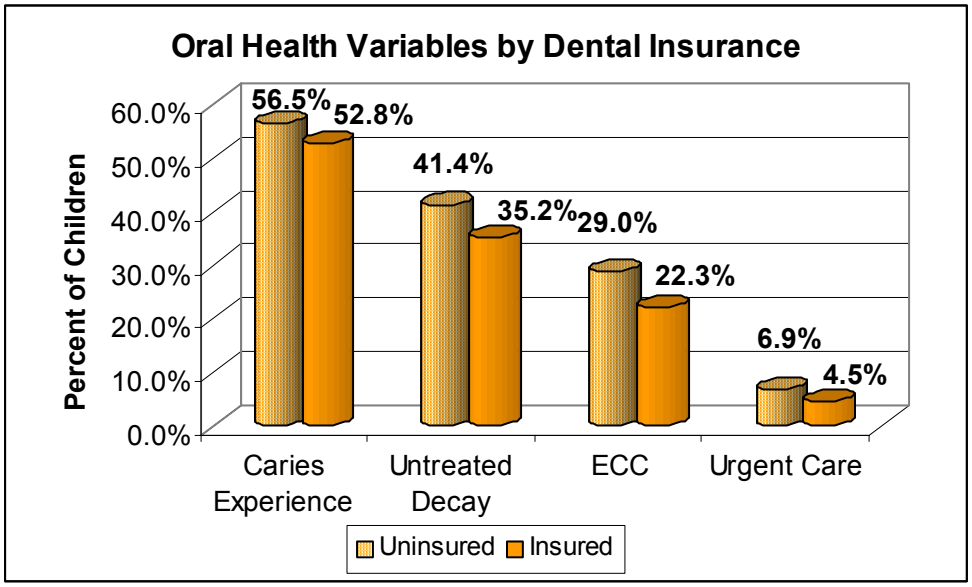
Lack of access to care is one barrier to the improvement of oral health in the state. It was expressed in the questionnaires that 22.0 percent of the children could not receive dental care when it was needed in the past year. When we compare the oral health of children who were in need of care but did not receive it to their counterparts, it is not surprising that we find more children with lack of access have caries experience, untreated decay, ECC, and need for urgent care. The average number of decayed teeth per child with lack of access to care was 2.13, which is over 2.5 times the average number of decayed teeth for children who obtained service (0.82).

Figure 6.



Dental insurance status is also a factor in how accessible dental care is to children. Parents reported that 64.7 percent of Head Start children had some kind of dental insurance. More children who did not have dental insurance had untreated decay, ECC, and need for urgent care. However, there was no significant difference in caries experience between the insured and uninsured. Given that access to dental care and insurance is not an option for a large part of the population, more education on caries prevention is needed for parents of young children. Otherwise, the conditions that go untreated will have negative effects on the children in school and in social settings throughout life.

Figure 7.



Appendix: Data Tables

Chart 1.

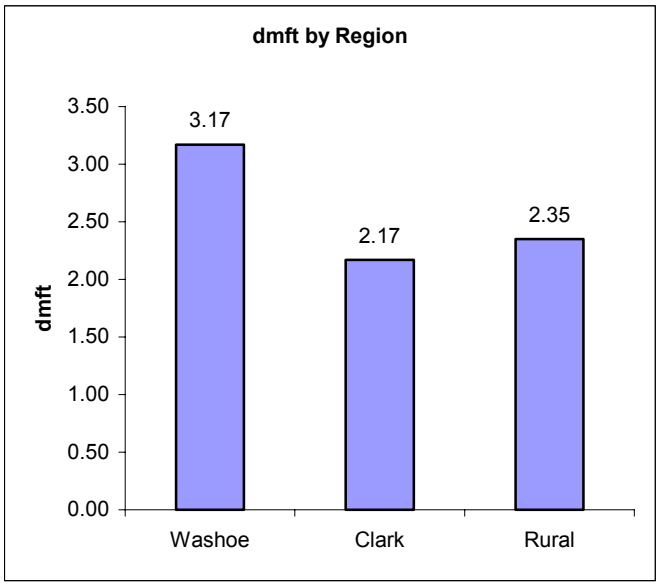


Chart 2.

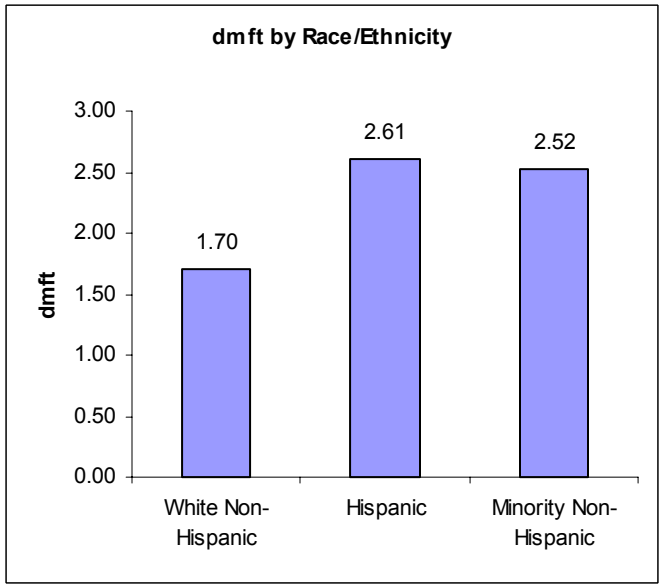


Chart 3.

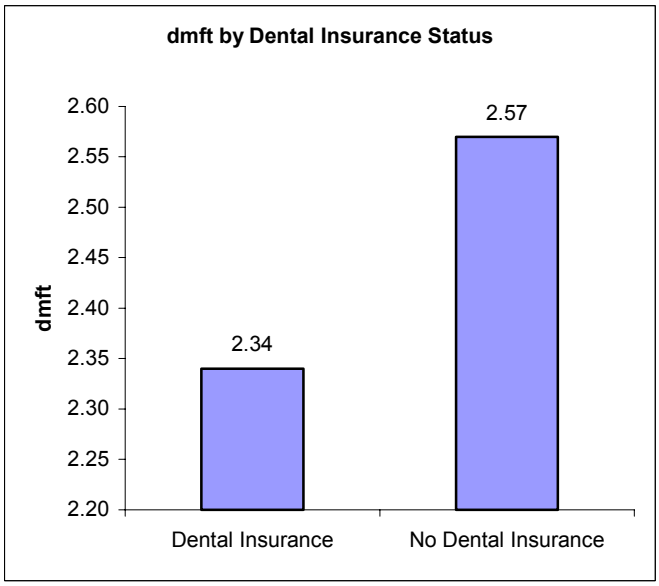


Chart 4.

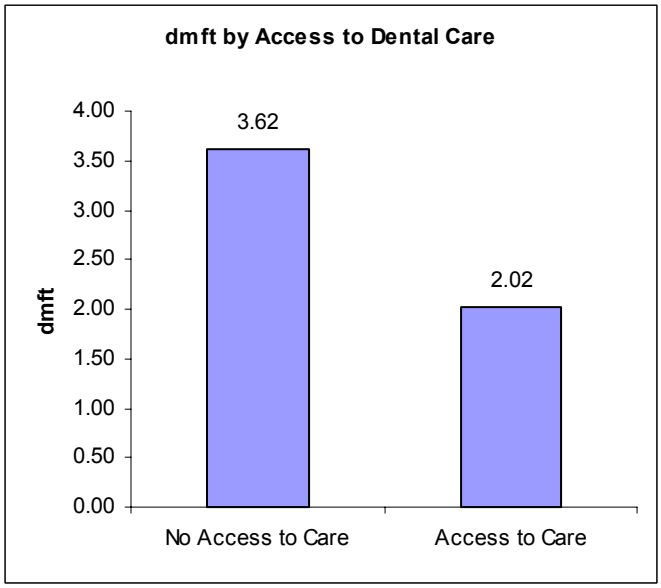


Table 1.

Oral Health Variables by Region

		Region	
Variable	Washoe	Clark	Rural
Caries Experience	64.9% (58.1% - 71.1%)	50.3% (46.8% - 53.8%)	53.7% (47.4% - 60.0%)
Untreated Decay	37.1% (32.0% - 42.2%)	37.2% (34.2% - 40.2%)	38.4% (33.0% - 43.8%)
ECC	28.9% (24.4% - 33.4%)	25.2% (22.8% - 27.6%)	21.2% (17.2% - 25.2%)
Treatment Urgency			
No Obvious Problem	62.8% (56.5% - 69.5%)	62.7% (58.8% - 66.6%)	62.2% (55.4% - 69.0%)
Needs Restorative Care	33.0% (28.2% - 37.8%)	31.6% (28.9% - 34.3%)	32.6% (27.7% - 37.5%)
Urgent Care (Pain or Swelling Present)	4.2% (2.5% - 5.9%)	5.6% (4.4% - 6.8%)	5.3% (3.3% - 7.3%)

*table shows percent of children and corresponding 95% confidence interval

Table 2.

Oral Health Variables by Race/Ethnicity

		Race/Ethnicity	
Variable	White Non-Hispanic	Hispanic	Minority Non-Hispanic
Caries Experience	44.4% (37.9% - 50.9%)	56.8% (52.8% - 60.8%)	54.0% (49.2% - 58.8%)
Untreated Decay	30.2% (24.8% - 35.6%)	38.9% (35.6% - 42.2%)	38.7% (34.6% - 42.8%)
ECC	16.3% (12.4% - 20.2%)	28.6% (25.8% - 31.4%)	24.0% (20.8% - 27.2%)
Treatment Urgency			
No Obvious Problem	70.1% (61.9% - 78.3%)	61.1% (57.0% - 65.2%)	61.3% (56.2% - 66.4%)
Needs Restorative Care	26.4% (21.4% - 31.4%)	32.9% (29.9% - 35.9%)	33.5% (29.7% - 37.3%)
Urgent Care (Pain or Swelling Present)	3.5% (1.7% - 5.3%)	6.0% (4.7% - 7.3%)	5.2% (3.7% - 6.7%)

*table shows percent of children and corresponding 95% confidence interval

Table 3.

Oral Health Variables by Age

		Age	
Variable	3 Years	4 Years	5 Years
Caries Experience	46.9% (40.1% - 53.2%)	52.2% (48.3% - 56.1%)	60.2% (55.0% - 65.4%)
Untreated Decay	37.0% (31.4% - 42.6%)	38.5% (35.2% - 41.8%)	36.0% (32.0% - 40.0%)
ECC	22.3% (17.9% - 26.7%)	26.2% (23.5% - 28.9%)	24.9% (21.6% - 28.2%)
Treatment Urgency			
No Obvious Problem	63.6% (56.2% - 71.0%)	61.4% (57.2% - 65.6%)	64.1% (58.8% - 69.4%)
Needs Restorative Care	30.4% (25.3% - 35.5%)	33.4% (30.3% - 36.5%)	30.8% (27.1% - 34.5%)
Urgent Care (Pain or Swelling Present)	6.0% (3.7% - 8.3%)	5.3% (4.1% - 6.5%)	5.1% (3.6% - 6.6%)

*table shows percent of children and corresponding 95% confidence interval

Table 4.

What was the main reason that your child last visited a dentist?

		Percent	95% Confidence Interval
Adjusted for Non-Response	Went in on own for check-up	50.3	47.7 - 52.9
	Was called in by dentist for check-up, exam,or cleaning	5.4	4.5 - 6.3
	Something was wrong, bothering or hurting	3.9	3.2 - 4.6
	Went for treatment of a condition found at earlier visit	7.6	6.0 - 8.0
	Other	18.0	15.0 - 18.2
	Never has been to the dentist	14.8	13.4 - 16.2
	Total	100.0	

Table 5.

Do you have any medical insurance?

		Percent	95% Confidence Interval
Adjusted for Non-Response	Yes	68.9	65.8 - 72.0
	No	31.1	29.0 - 33.2
	Total	100.0	

Table 6.

Do you have any dental insurance?

		Percent	95% Confidence Interval
Adjusted for Non-Response	Yes	64.7	61.7 - 67.7
	No	35.3	33.1 - 37.5
	Total	100.0	

Table 7.

During the past 12 months, was there a time when your child needed dental care but could not get it at that time?

		Percent	95% Confidence Interval
Adjusted for Non-Response	Yes	22.0	20.2 - 23.8
	No	78.0	74.7 - 81.3
	Total	100.0	

Table 8.

The last time your child could not get the dental care he/she needed, what was the main reason he/she couldn't get care?

		Percent
Adjusted for Non-Response	Could not afford it	5.0
	No insurance	5.8
	Dentist did not accept Medicaid/insurance	1.6
	Speak a different language	.1
	Wait is too long in clinic/office	.5
	Health of another family member	.3
	Difficulty in getting appointment	1.3
	No way to get there	.7
	Didn't know where to go	.7
	No dentist available	.3
	Not a serious enough problem	.4
	Dentist hrs not convenient	.0
	Don't like/believe in dentists	.1
	Other reason	1.8
	No answer	11.8
	Not Applicable	69.6
	Total	100.0

Table 9.

Oral Health Variables by Access to Dental Care in the Past Year

	During the past 12 months, was there a time when your child needed dental care but could not get it at that time?	
Variable	**Yes**	**No**
Caries Experience	71.2% (64.2% - 78.2%)	48.9% (45.8% - 52.0%)
Untreated Decay	55.2% (49.1% - 61.3%)	32.6% (30.0% - 35.1%)
ECC	39.8% (34.6% - 45.0%)	20.6% (18.6% - 22.6%)
Treatment Urgency		
No Obvious Problem	44.9% (39.4% - 50.4%)	67.5% (63.9% - 71.1%)
Needs Restorative Care	42.2% (36.8% - 47.6%)	29.4% (27.0% - 31.8%)
Urgent Care (Pain or Swelling Present)	12.9% (9.9% - 15.9%)	3.1% (2.3% - 3.9%)

*table shows percent of children and corresponding 95% confidence interval

Table 10.

Oral Health Variables by Dental Insurance

	Do you have any dental insurance?	
Variable	**Yes**	**No**
Caries Experience	52.8% (49.3% - 56.3%)	56.5% (51.7% - 61.3%)
Untreated Decay	35.2% (32.3% - 38.1%)	41.4% (37.3% - 45.5%)
ECC	22.3% (20.0% - 24.6%)	29.0% (25.6% - 32.4%)
Treatment Urgency		
No Obvious Problem	64.9% (61.0.% - 68.8%)	58.4% (53.5% - 63.3%)
Needs Restorative Care	30.6% (27.9% - 33.3%)	34.8% (31.0% - 38.6%)
Urgent Care (Pain or Swelling Present)	4.5% (3.5% - 5.5%)	6.9% (5.2% - 8.6%)

*table shows percent of children and corresponding 95% confidence interval

Table 11. **Participation Rates of Head Start Programs**

LOCATION	# Screened	# Questionnaires	Total Enrolled	Percentage of Children Screened
AGNES RISLEY	22	23	51	43.14%
BERNICE MATTHEWS	60	45	85	70.59%
BOYS AND GIRLS CLUB	58	69	96	60.42%
CASA ROSA	56	68	69	81.16%
CECILE WALNUT	63	71	108	58.33%
DESERT HEIGHTS	39	43	51	76.47%
DRESSLERVILLE	11	13	20	55.00%
ECHO LODER	44	45	51	86.27%
ELKO	65	71	101	64.36%
ELKO ITCN	12	13	20	60.00%
ELY	36	42	57	63.16%
FALLON	22	22	34	64.71%
FALLON ITCN	11	11	13	84.62%
FERNLEY	28	28	34	82.35%
HERB KAUFMAN	36	38	94	38.30%
HULLUM HOMES	26	33	35	74.29%
HUNGRY VALLEY	11	13	16	68.75%
JACKPOT	3	3	18	16.67%
JONES GARDENS	17	18	31	54.84%
LOVELOCK	15	14	18	83.33%
MCDERMITT	15	14	20	75.00%
MOAPA	14	14	20	70.00%
NIXON	12	12	20	60.00%
OWYHEE	7	7	20	35.00%
PDC	8	11	25	32.00%
PENTECOSTAL TEMPLE	27	17	51	52.94%
REACHOUT	43	63	68	63.24%
RENO/SPARKS IC	30	30	36	83.33%
REYNALDO MARTINEZ	113	112	183	61.75%
SARATOGA PALMS	27	27	38	71.05%
SCHURZ	14	13	19	73.68%
SILVER SPRINGS	12	12	17	70.59%
SMITHRIDGE	52	62	68	76.47%
SPRING VALLEY	120	136	263	45.63%
STEWART	34	27	40	85.00%
SUNFLOWER	48	98	109	44.04%
SUTRO	105	114	132	79.55%
TARA HILLS	72	86	99	72.73%
WADSWORTH	18	22	34	52.94%
WELLS	7	7	16	43.75%
WESTMINSTER	153	152	224	68.30%
WNCC	14	14	17	82.35%
YA GATES	72	84	99	72.73%
YERINGTON	25	18	34	73.53%
Total: 44 programs	**1677**	**1835**	**2654**	**Avg. Participation Rate = 64.37%**